



# Vivekananda College of Engineering & Technology

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PRJ-
Projects
List
15/08/2022

## ME PROJECT List of Projects: 2021-22

MECHANICAL ENGINEERING PROJECTS LIST -AY 2021-22						
SNo	Dept	Guide	USNs	Title	Status	Abstract (100 words)
1	ME	Mr. Naveen S P	4VP18ME029 4VP18ME046 4VP18ME047 4VP18ME048	AUTOMATIC DRAINAGE CLEANING SYSTEM	Working	<p>The proposed concept is to replace the manual work in drainage cleaning by automated drainage cleaning system. Now-a-days even though mechanical drainage plays a vital role in all domestic and industrial applications in the proper disposal of sewage from domestic, industries and commercials are still a challenging task. Drainage pipes are using for the disposal and unfortunately sometimes there may be loss of human life while cleaning the blockages in the drainage system.</p> <p>The Automated Drainage Cleaning system is a machine which helps to protect the environment from different kinds of environmental hazards through the promotion waste management by the removal of garbage from the drainage system. These wastes when not removed end up settling in residential places where these wastes are burnt thereby causing climate change otherwise these wastes block the drainage systems thereby causing flooding. In this project the proposal concept is to replace the manual work in drainage cleaning by automated system. We know that water has a great importance in human being life, the water flow in drain full of wastes like polythene, bottles etc. The gutters get blocked due to these wastes in water. To overcome this problem and to save human life we implement a design "Automatic Drainage Cleaning system" and we have designed our project to use this in efficient way to control the disposal of wastage and with regular filtration of wastage.</p>
						Packaging is the wrapping material around a consumer item



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2	ME	Dr. Manujesh B J	4VP17ME049, 4VP18ME004 4VP18ME006 4VP18ME008	DESIGN AND DEVELOPMENT OF PACKAGING SUBSTRATE FOR ELECTRONIC GADGETS	Working	<p>that serves to contain, identify, describe, protect, display, promote and make the product marketable and keeps it clean. Most commonly used packaging materials are plastic, corrugated boxes, metal, wood etc. All these materials are expected to harm our mother earth in their own way. So, we have to reduce the usage of these materials and replace it with non-polluting biodegradable materials.</p> <p>The electronic packaging market was valued at USD 1020.13 million in 2020, and is expected to reach USD 2825.42 million by 2026, at a CAGR of 18.51% over the forecast period (2021- 2026). Consumer electronics segment is the largest sector of the market studied, due to the rising demand for products, such as TVs, set-top boxes, MP3 players, digital cameras, and the processes are generally more suited for mass production. Moreover, many devices used in the healthcare sector depends on semiconductor manufacturing technology, which, in turn, is expected to impact the electronic packaging market. But non-biodegradable packaging results in a significant part of municipal solid waste and has caused increasing environmental concerns, resulting in a strengthening of various regulations aimed at reducing the amounts generated. Among other materials, a wide range of oil-based polymers is currently used in packaging applications. These are virtually all non-biodegradable, and some are difficult to recycle or reuse due to being complex composites having varying levels of contamination.</p> <p>In order to overcome these issues of packaging we are developing a new composite material derived from agricultural waste generated after harvesting the crops which</p>
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					<p>would be a great support for farmers along with the reduction in pollution. In this project we are developing a composite material out of fibers extracted from banana stem and using gauze (a thin, translucent fabric with a loose open weave).</p> <p>The expansion in these bio-based materials has several potential benefits for greenhouse gas balances and other environmental impacts over whole life cycles and in the use of renewable, rather than finite resources. It is intended that use of biodegradable materials will contribute to sustainability and reduction in the environmental impact associated with disposal of petroleum oil-based polymers. Biodegradable packaging materials are most suitable for single-use disposable applications where the post-consumer waste can be locally composted.</p>	
3	ME	Mr. Raghavendra Prasad S A	4VP18ME012, 4VP18ME021, 4VP19ME401 4VP19ME405	DESIGN AND DEVELOPMENT OF SINGLE STAGE WATER TURBINE	Working	<p>In this world of depleting resources, renewable energy plays an important role. The role of renewable energy in tomorrow's world is of great significance for the global environmental stability. Sun, wind and flowing or stored hydro are considered the most common renewable energy sources for power generation. Out of these three renewable energy resources, the advantage of hydro energy is that it can continuously supply energy and can serve as a base power. Hydro energy is one of the major renewable energy sources. The water wheels were developed in the early ages for the power production, due to their large diameter and small contact area they failed in utilizing water sources effectively, therefore water wheels were less efficient. In this study Single Stage turbine is designed to extract energy from flowing water. The kinetic energy available in the flowing water is made use to create the impulse action on turbine</p>



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					blades. To extract more energy, turbine blades are made 30° inclined. the mechanical energy is converted into electrical energy. This Project is funded by NAIN (New Age Innovation Network). NAIN is an Entrepreneurship Development Program launched under the start-up policy-2015, the students studying in different disciplines are motivated by project funding and mentoring to set up their own start-ups for self-employment.
4	ME	Mr. Ajith K	4VP18ME027, 4VP18ME030, 4VP18ME033, 4VP18ME036	DESIGN AND DEVELOPMENT OF SOLAR ARECANUT DRYER WITH AUTOMATIC RAIN AND MOISTURE DETECTOR	Working The cultivation of areca nut can be traced back to vedic times. Areca nut commonly known as betel nut is the most important plant in India. Available commercially dried, and new forms. It takes about five tears of areca nut palm to mature and produce. Each areca nut palm is harvested once a year. The harvested areca nut needs to dry thoroughly before being removed. One of the biggest problems on the agriculturist face is the drying of the areca nut. It takes about 60-65 days to dry areca nut and while drying areca nut there are many other problems such as lack of staff, drying areca nut during the rainy season. This project focuses on building a multi-component areca drying unit. The room is moistened with a light sensor to detect rain and light. A two-chamber design where one is remodeled and the other is moved. Both rooms are covered with tarpaulin. Whenever it rains, the sensor will detect it and send a signal to the motor and the engine will operate. Motor drives the room horizontally and will close the areca nut. When the rain stops, the light sensor will send a signal to the chamber and will expose the areca nut again. Here the closing and opening of the room will be regarded as the discovery of sunlight and thus reduces the human effort. As the areca nut is dried in a closed room, it reduces the number



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					of drying days. It can also be used to quickly dry other plants such as Rubber, Pepper, Tea, Grape, Coffee, Coconut etc.
5	ME	Mr. Ajith K	4VP18ME001 4VP18ME011 4VP18ME018 4VP18ME019	DESIGN AND FABRICATION OF AUTOMATIC BLUE-TOOTH CONTROLLED SOLAR DRYER	<p>Areca nut is one of the commercial crop in India. Arecanut more commonly known as Betel Nut is a very important crop in India. It takes approximately five years for an arecanut palm to mature and bear fruit. Each areca palm is harvested once a year. The cultivation of areca nut can be traced back to Vedic periods. Areca nut was even used in Ayurvedic and Ethane veterinary medicines. It is commercially available in dried, cured, and fresh forms.</p> <p>This project work emphasizes on developing an arecanut dryer unit. The machine is able to detect rain and moisture and also with the help of Bluetooth module we can controlled easily. It commercially available in dried, cured, fresh forms and one of main problem in areca nut field, is drying areca nut. So usually it required 60-65 days to dry areca nut and while drying areca nut there are many other problems like labour, raining and moisture. So taking this all consideration into action, we have designed a solar dryer with automatic rain and moisture detector with Bluetooth controlled system which will detect the rain and close the shelter and hence reduce the human effort. It reduces the number of days of drying and also helps in quick drying of other crops like Rubber, Pepper, Coconut etc and some of food items.</p>
6	ME	Mr. Deepak Kumar Shetty K	4VP18ME037 4VP18ME039 4VP18ME040 4VP18ME045	DESIGN AND FABRICATION OF COCOA BEANS DRYER	<p>Nowadays, cocoa drying using conventional method is difficult to use in all seasons due to lack of sun light and moisture content in air. The old method of drying is not useful since it takes up space, needed the sun as the drying media which causes a long drying time. One of the</p>



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					alternative methods of drying cocoa beans is by using biomass energy in combination with available sun light as heat energy. By using this dryer type, the process of drying takes faster comparing to the old method and the quality of the cocoa beans are improved. The dryer which uses an air blower, furnace were the woods pieces are burned can be one of the effective solutions due to its less cost, low maintenance, a better drying result and high drying capacity. The dryer was tested for its performance after the design and fabrication. The required optimum temperature was achieved and the speed of drying was satisfactory.
7	ME	Mr. Satheesha Kumar K	4VP18ME400 4VP18ME404 4VP17ME075	DESIGN AND FABRICATION OF MAGLEV WINDMILL	Working The basic principle of operation of a maglev windmill or a vertical axis turbine is similar to the conventional windmill, but the blade design and axis of blades are different than the conventional windmill. The proposed model of windmills aims to reduce frictional losses during power generation. To do this, the implemented system uses the very basic principle that is magnetic levitation. Using strong neodymium magnets, the blades are kept levitating and the blade design enables to utilization of the wind from any direction. A SEPIC converter will then be used to regulate the varying voltage from the rectifier to output a steady AC voltage.
8	ME	Mr.Sudarshan ML	4VP18ME017 4VP19ME404 4VP19ME400 4VP18ME022	DESIGN AND FABRICATION OF PEANUT DE-SHELLING MACHINE	Working In India, most of land use for agricultural purpose which produces semi-finished product or goods. Groundnut also one of the agricultural semi-finished goods. Groundnut is grown on small scale farmers in developing countries like India. The average kernel price is approximately twice the price of pod. Lack of groundnut processing machines, especially groundnut Sheller, is a major problem of groundnut production, especially in our country India. In the

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					beginning the peanuts were separated from its shells by the workers. They simply decoct the groundnut by their hands and separate the peanuts from its shell. The output got from this method, was very low and it does not fulfill the market demand because it was very time-consuming process. A research-work for design, fabricate, and performance evaluation of a groundnut Sheller consisting of feed hopper with a flow rate control device, shelling unit, separating unit and power system. The performance of the machine was evaluated in terms of throughput capacity, shelling efficiency, material efficiency and mechanical damage. Regression models that could be used to express the relationship existing between the Sheller performance indices, pod moisture content and feed rate were establish. This project describes about the design and fabrication of various components of groundnut Sheller machine. Hence in this design of various parts are necessary, and design of various parts due to which the design quality of those parts will be improved. Overall, this project involves processes like design, fabrication and assembling of different components etc. By keeping the point in our mind, we think that we should make such a machine, whose production capacity is more & machine gets operated on 0.5 H.P. electric motor instead of manual work. The new and small former or business man can start their business by investing less capital.
9	ME	Mr. Naveenakrishna P V	4VP18ME412 4VP17ME007 4VP17ME058	Design and Development of Seed Sowing Machine	Working In this project we use rack and pinion mechanism which converts linear motion into rotary motion. Mainly it is best example for conversion of mechanical energy into electrical energy. This speed breaker generates small amount of electricity, electricity can be stored in the battery, and we can



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					use for day to day uses. Construction is also simple so that we can place this speed breaker in parking places, highway tolls, and in city roads also.
10	ME	Mr. Satheesha Kumar K	4VP18ME034 4VP18ME035 4VP18ME038 4VP19ME409	DESIGN AND FABRICATION OF SINGLE WHEEL PESTICIDE SPRAYING MACHINE	Working The design and fabrication of single wheel pesticide spraying Machine. This Machine consists of a backpack sprayer which is mounted on the tank base of the trolley. The piston rod of the tank is connected to the crank, which is mounted on the smaller Sprocket, which in turn is connected with a larger sprocket through the chain; the larger sprocket is mounted on the trolley. The pump is connected to the pressure tank, which pressurizes the fluid during operation and stores it in the pressure tank. Using a flexible hose, the pressurized pesticide is transferred to the multiple nozzles. According to the need, the valve is operated to obtain a fine spray throughout. By using manually operated pesticide sprayer, the strain, which is caused to the farmers in conventional backpack sprayers, is reduced, a larger area can be covered in a short time and consume less space to occupy.
11	ME	Mr.Sudarshan ML	4VP18ME003 4VP18ME014 4VP18ME032 4VP18ME041	DESIGN AND FABRICATION OF AUTOMATIC GRAIN WEIGHING AND PACKING MACHINE	Working Automatic packing is widely used in various grocery shops. Small scale and medium scale grocery shops will go for manual method of weighing and packing. Manual method of weighing and packing is inaccurate, time consuming. There are automatic machines available in market, but its cost is higher. Thus, it is not affordable by these grocery shops. This project deals with the design and fabrication of automatic grain weighing and packing machine with affordable cost. The machine is accurate in weighing, firm in sealing the packets. Packed products are common today. The packing is done in all level of shops i.e., small, large scale and medium scale. Large scale shops will able to purchase the packing machines, that are available in market, which are relatively

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					costlier. The small and medium scale grocery shops will go for manual sealing method and manual sealing machines. This method requires 3 to 4 employees and also has low packing rate, accuracy. The manual interfere in weighing, plastic folding and sealing will affect in overall quality of packing. The project is made to solve this particular problem. This machine aims to pack the grains with accurate weighing, good plastic folding, firm sealing. Also, the machine gives higher packing rate than manual packing. The cost of the machine is 50% lesser than the machines available in market thus making it economical. Stainless steel components are safer and rust free, which are suitable for food products. Portability due to less weight and easier cleaning methods are added features for the machine.
12	ME	Dr. Deepak K B	4VP18ME010 4VP18ME024 4VP18ME025 4VP18ME026	FABRICATION, EXTRACTION AND ANALYSIS OF FUEL FROM PLASTIC WASTE USING CATALYST	Analysis Plastics have oven their way into our daily lives and pose a tremendous threat to the environment. Over 100 million tons of plastic are produced annually worldwide, and the used products have become a common feature at overflowing bins and landfills. Though work has been done to make futuristic biodegradable plastics, there have not been many conclusive steps towards cleaning up the existing problem.  In this project work, the process of converting waste plastic into value added fuels is explained as a viable solution for recycling of plastics. Thus two universal problems such as problems of waste plastic and problems of fuel shortage are being tackled simultaneously. In this study, plastic wastes (low density polyethylene) were pyrolysed to get fuel oil that has the same physical properties as diesel.  As pyrolysis is done in absence of oxygen and at high temperature, a reactor was fabricated for the same. The waste



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					<p>plastics are subjected to depolymerisation, pyrolysis, thermal cracking and distillation to obtain value added fuels. The fuel obtained after pyrolysis, had properties very similar to that of diesel, this was ascertained after conducting various experiment. Converting waste plastics into fuel hold great promise for both the environmental and economic scenarios.</p> <p>Thus, the process of converting plastics to fuel has now turned the problems into an opportunity to make wealth from waste. The hazards of plastic waste are well known to us. The conversion of oil from plastic has dual benefits. One of them is that the oil produced can be used as a fuel for domestic purposes, vehicles and industries. Secondly the various types of pollution caused due to waste plastics can be minimized.</p>
13	ME	Mr. Harish S R	4VP18ME007 4VP18ME016 4VP18ME044	IMPROVEMENT OF AUTOMATED SAND SIEVING MACHINE	<p>Working</p> <p>Building Construction requires sand as an important ingredient. Sand is used at different stages in construction right from the foundation to the finishing work. This sand is needs to be sieved properly to be used in various stages of construction. Conventionally sieving is done manually using fixed sieves. The manual process is time consuming and labor extensive which involves a lot of time and cost.</p> <p>The advancement of technology has introduced many types of machines for the said purpose. Although, these machines reduce time it is also associated with its own demerits such as bulky in size, cost &amp; efficiency. The proposed project is an attempt to improve the existing machine with respect to its demerits as mentioned above. The objective of the proposed project is to build an automated sand sieving machine which is small in size, efficient &amp; economical.</p>



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14	ME	Dr. Manujesh B J	4VP19ME402 4VP19ME403 4VP19ME406 4VP19ME408	MODELLING AND ANALYSIS OF AUTOMOTIVE TYRE TREADS	Modeling & analysis	<ol style="list-style-type: none"> <li>1. This Project aims at the design parameters and studies related to Tyre Tread. In this project we studied the advantages of different types tyre treads</li> <li>2. In tyre tread manufacturing we should follow the different design considerations like safety and road efficiency, effective holding capacity, degree of water evacuation and improves the balance and it also improves the vehicle and its performance on the road.</li> <li>3. Static analysis of Tyre tread CAD model carried out using finite element package ANSYS is successfully carried out to determine equivalent stresses, maximum deformations, Factor of Safety and its location on tyre tread model.</li> <li>4. Results concluded that the Arrow tyre tread designed found to be better as it undergoes minimum deformation.</li> <li>5. The Side diamond tread tyre design is recommended as it maximum stress factor.</li> </ol>
15	ME	Mr. Naveen S P	4VP18ME015 4VP18ME031 4VP18ME042 4VP18ME043	SOLAR POWERED LAWN MOWER WITH SPRAYER	Working	<p>Rapid growth of various high-tech tools and equipment makes our jobs done comfortable and sophisticated. Due to the continuous increase in the cost of fuel and the effect of the emission of gases from the burnt fuel atmosphere, this necessitated the use of the abundant solar energy from the sun as a source of power to drive a grass cutter and pesticide sprayer. The project aims at solar powered grass cutter and safety pesticide sprayer machine system. A solar powered grass cutter and pesticide sprayer was designed and developed, based on the general principle of mowing this project deal with designed and fabrication of solar powered grass cutter and sprayer comprises of direct current (DC) motor, rechargeable battery, solar panel, stainless steel blade and control switch. So in this project we design and fabricate solar powered grass cutter and sprayer which can be use as per our need.</p>